

The body-setae number the same throughout the life of the larva, but in the newly-hatched specimen they are crowded together in a smaller space (cf. the extreme figures in Table 1), and so they are harder to estimate, both in number and arrangement, than in the fully-engorged specimen. The newly-hatched larva, too, is relatively flat and thin, and so there is often considerable difficulty in allotting the posterior rows of setae to the dorsum or the venter. And the older larva has been subjected to more stresses, and so may have had many of its setae rubbed off; although the pits may remain, these are not always reliable guides; however, in some species conspicuous pits or tubercles leave no chance of error. Allowances for these difficulties should always be made.

Scutal measurements are of particular importance. Finnegan was the first to point out, in print, the chief trouble, when she stated (1945) that the apparent length of the scutum of *Leeuwenhoekia australiensis* Hirst, 1925, varies with the degree of engorgement. In a flat, unfed larva the scutum usually lies so nearly in the horizontal plane that there is no appreciable parallax error; or alternatively, in such larvae the angle between the scutum and the horizontal will be substantially the same in all specimens, and so every measurement, even by different observers at different times, will be subject to the same amount of parallax error. But with engorgement the scutum becomes progressively more and more tilted forwards. Text-figure 3 shows how this can affect longitudinal measurements of the scutum and its parts, but since there is no lateral tilting with engorgement, ratios between, say, the length and the width of the scutum may be materially altered.

Hence it may be laid down that where ratios between transverse and longitudinal measurements of the scutum or its parts are of importance in differentiating species, comparisons should be made only between newly-hatched specimens.

A NEW SPECIES OF *PELECORHYNCHUS* (DIPTERA, TABANOIDEA)
FROM THE DORRIGO PLATEAU, NEW SOUTH WALES.

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(Three Text-figures.)

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Synopsis.

Pelecorhynchus lunulatus, n. sp., is described from near Ebor, New South Wales, at about 4,000 feet above sea-level. Seven species of the genus are recorded from the area.

It is rarely that one encounters in the Diptera a single species so distinctive that it is worth describing by itself. The Dorrigo Plateau is rich in Pelecorhynchidae, and it is the type locality of two very striking forms, *Pelecorhynchus tillyardi* Tayl. and *P. distinctus* Tayl. Nevertheless, the discovery of another equally striking species was as surprising as it was exciting. Only three specimens were obtained in a fortnight's strenuous collecting, but they are sufficient to justify description.

The new species belongs to the *fusciger* Group, as defined in an earlier paper (Mackerras and Fuller, These PROCEEDINGS, 67: 9-76, 1942), but it fits uneasily in any of the series into which the group was divided. In the key to Australian species on pp. 45-47, it will run to caption 18, less certainly thence to 27, where it will be lost, the ruff being black and white and the post-mesopleural tuft yellow to orange, while the brownish-fawn scutum, with narrow black dorsocentral lines and black margins, will immediately separate it from any of the species in succeeding captions. The conspicuous enlargement of the upper facets of the eyes of the male is unique in the genus, although slight differentiation into upper and lower zones can be seen in a few species.

The seven species now known from the plateau, chiefly from a triangular area of high country to the south-west, bounded by Ebor, Point Lookout and a point 12½ miles along the Ebor-Armidale road, are:

personatus Group: *P. nigripennis* Ric.

fulvus Group: *P. distinctus* Tayl.

fusciger Group: *P. fusciger alpinensis* M. & F., *P. nero* M. & F., *P. interruptus* M. & F., *P. tillyardi* Tayl., and *P. lunulatus*, n. sp.

Pelecorhynchus lunulatus, n. sp.

Types: Holotype ♂, from swamp 12½ m. S.W. of Ebor on Armidale road, N.S.W., 14 Dec., 1952, in the Division of Entomology, C.S.I.R.O., Canberra, A.C.T.; allotype ♀, from Coutt's Water, 12 m. E. of Ebor on Dorrigo road, 15 Dec., 1952, in the School of Public Health and Tropical Medicine, University of Sydney; paratype ♀, from swamp 12 m. S.W. of Ebor on Armidale road, 17 Dec., 1952, in the Queensland Institute of Medical Research, Brisbane.

A large brown species, with a fawn-brown scutum marked by narrow black median and dorsocentral lines and strongly margined by black hairs; pleural hairs black, except for two small tufts of white and a conspicuous, lunulate, orange-yellow post-mesopleural tuft; legs reddish-brown; wings largely flavid; abdomen bright mahogany-brown. Length: ♂, 18 mm. with hypopygium retracted; ♀, 20-21 mm. excluding ovipositor.

♂. *Head*. Eyes blackish; upper facets about three times as big as lower, and separated from them by a fairly well-defined line. Ocellar triangle brownish-black. Frons brownish-fawn, with a black zone around base of each antenna. Face brown to tawn, with long, silky, black hairs. Parafacials brownish-fawn, except for a narrow,